

"The Vital Ingredient for Permanence in Concrete"



"OMICRON"  
DISCOVERED  
1927

OMICRON PRODUCTS

THE MASTER BUILDERS COMPANY • CLEVELAND OHIO

# THE MASTER BUILDERS COMPANY

7016 Euclid Avenue  
CLEVELAND, OHIO

IN CANADA:  
The Master Builders Company, Ltd.  
71 Browns Avenue  
Toronto, Ont.

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Telephone, Main 3178  
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DETROIT, MICH., 602 Michigan Theatre Bldg.  
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MINNEAPOLIS, MINN., 703 Third Ave., So.  
Telephone, Atlantic 4803

Research Laboratories: Cleveland

## TECHNICAL SERVICE

26 years of field experience and laboratory research in concrete and mortar treatments stand back of Master Builders Specifications and Products.

This specialized knowledge is "on call" for architects and builders.

Please telephone or write our nearest office.

## BRANCH OFFICES

MONTREAL, QUE., 1434 St. Catherine St., W.  
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NEW YORK, N. Y., 101 Park Ave.  
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PHILADELPHIA, PA., 901 Architects' Bldg.  
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READING, PA., 2115 Highland St.  
Telephone, Sinking Springs 819-823  
ST. LOUIS, MO., 304 Farmers & Merchants Trust Bldg.  
Telephone, Central 8844  
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Telephone, Sutter 1100  
TORONTO, ONT., 58 Wellington St., E.  
Telephone, Melrose 1798  
WASHINGTON, D. C., 807 Chandler Bldg.  
Telephone, National 6303

Factories: Cleveland, Buffalo, Toronto

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## REPRESENTATIVES

(For Street Address and Phone Number, Consult Directory)

AUGUSTA, GA.  
Augusta Bldg. Supply Co.  
BALTIMORE, MD.  
Monumental Brick & Supply Co.  
BIRMINGHAM, ALA.  
Thomas Supply Co.  
BUFFALO, N. Y.  
Troup Engineering Co.  
CALGARY, ALBERTA  
Bell & Morris  
CHARLOTTE, N. C.  
A. L. Simpson  
COCOANUT GROVE, FLA.  
Renault Lumber Co.  
COLUMBIA, S. C.  
Bass Roofing Co.  
CUMBERLAND, MD.  
Young Sales & Engr Co.  
DALLAS, TEX.  
Macatee, Inc.  
DENVER, COLO.  
Rocky Mtn. A. & B Service  
DES MOINES, IOWA  
A. J. Crawford  
DUBUQUE, IOWA  
Baumgartner Sales Service  
FORT SMITH, ARK.  
Harry E. Barr  
FORT WORTH, TEX.  
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Lincoln Brick Co.  
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A. C. Cooke Coal & Cement Co.  
KANSAS CITY, MO.  
C. A. Brockert Cement Co.  
KNOXVILLE, TENN.  
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LA CROSSE, WISC.  
Louis E. Meier  
LANSING, MICH.  
Briggs & Co.  
LEXINGTON, KY.  
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MILWAUKEE, WIS.  
W. H. Pipkorn Co.  
(Continued on Margin of Inside Back Cover)



IN CANADA  
**THE  
MASTER  
BUILDERS  
CO., LTD.  
TORONTO  
MONTREAL**



# "The Vital Ingredient for Permanence in Concrete"

## OMICRON

Omicron, discovered in 1927 by Master Builders Research Laboratories, is a synthetic puzzolana suspended in a gelatinous colloid. The importance of this development cannot be overestimated because it marks a new and radical advance in the effort to increase the practical life of concrete structures.

*Omicron's unique function is to REDUCE water-cement ratio while actually increasing plasticity.* The result is—an important reduction in shrinkage.

Being a synthetic puzzolana (concentrated) it combines with and renders insoluble a large portion of the lime content.

The result, attested in the laboratory and field, is greatly increased resistance to freezing and thawing and mild corrosive action.

Omicron, of itself, is not a commercial product. It is available only as an exclusive ingredient of The Master Builders Products which are described in following pages.

### WHAT OMICRON DOES

#### Reduces Shrinkage

When used in concrete and mortar, Omicron Products actually *reduce shrinkage through their unique function of substantially increasing plasticity with water-cement ratio reduced—up to 12½%—*regardless of type or kind of cement used and regardless of design of mix.

Inasmuch as control of *volume change*—i.e., reduction of shrinkage—is paramount in concrete and mortar construction, Architects and Engineers who realize this vital significance now have at hand a positive remedy.

#### Resists Disintegration and Corrosion

Being a highly concentrated puzzolana, Omicron converts a substantial percentage of the soluble lime into insoluble cementitious compounds. The resultant structure becomes much more resistant to weathering, freezing and thawing and mild corrosive action.

#### PITTSBURGH TESTING LABORATORY

2" x 4" Compression Specimens Immersed in  
10 per cent Sodium Sulphate

Pounds per Square Inch	28 days in Water	21 days in Acid	Loss from Corrosion
1:3 concrete, untreated	3750	3500	6.6%
1:3 concrete, plus Omicron	4487	4400	1.7%
Increase with Omicron	19.6%	25.7%	

#### Increases Plasticity

Omicron is distinguished in principle from any known plasticizers because they function without reducing water ratio and only to correct under-sanded mixes. In contrast, the extreme plasticity imparted by Omicron Products *under all conditions* permits a reduction in the water ratio—whether the mix be over-sanded or under-sanded. Because of its shrinkage reducing function, Omicron is of immense value even in a perfectly designed and graded mix.

#### Permanently Increases Strength

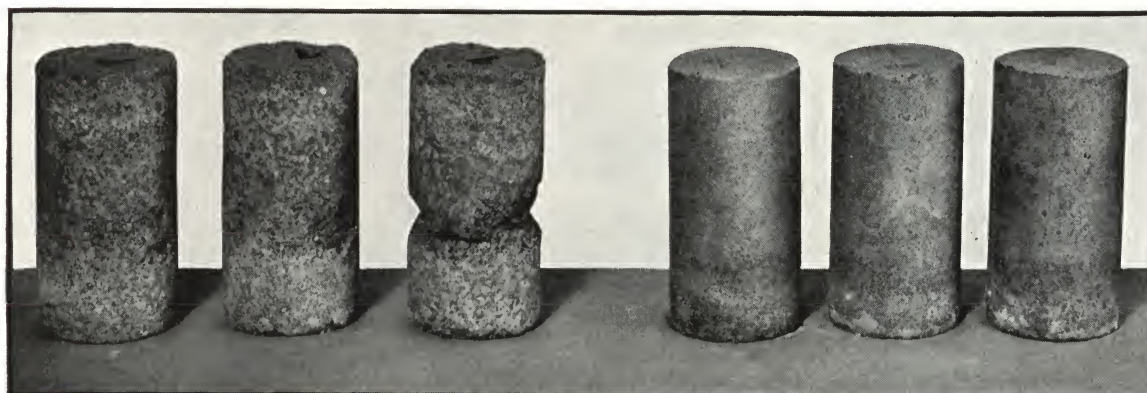
Tests by Hunt, Pittsburgh Testing Laboratory and other independent laboratories show that the Omicron Ingredient accounts for a substantial, permanent increase in strength over plain cement mixes. The following test is typical. Additional and detailed reports furnished upon request.

#### ROBERT W. HUNT COMPANY

1 cement: 3 sand. Compressive Strength in  
Pounds per Square Inch

Age	Untreated	Plus Omicron	Per Cent Increase
3 Days	1557	1823	17
7 Days	2295	2775	20.9
28 Days	2909	3587	23.3

### THE EFFECTS OF 48 CYCLES OF FREEZING AND THAWING ON MORTAR CYLINDERS



Untreated

With Omicron





## For LEAKPROOF BRICKWORK AND MASONRY

# Mortarproofing

TRADE MARK

*The only logical and proven remedy for SHRINKAGE, the real cause of leaks in brickwork.*

Authorities agree that shrinkage of mortar which results in cracks between mortar and brick, is the major cause of leakage.\*

All mortars shrink excessively during the first forty-eight hours before a strong bond is formed between mortar and brick. Shrinkage occurs regardless of whether patented masonry, cement, or lime mortars or combinations of cement and lime are used; waterproofed or otherwise.\*\*

Shrinkage is inevitable in any mortar mix because more than twice as much water is required to provide workability than is needed to hydrate the cement.

*Only by reduction of water content without loss of workability can shrinkage be checked.\*\*\** That is exactly what mortarproofing does.

**MORTARPROOFING PRODUCES AN IDEALLY WORKABLE MORTAR WITH MUCH LESS WATER AND REDUCES SHRINKAGE APPROXIMATELY 50%, OR BELOW THE CRITICAL POINT AT WHICH IT BREAKS THE BOND.**



**STOP These  
Shrinkage Cracks with  
MORTARPROOFING**

### MORTARPROOFING DOES MORE THAN REDUCE SHRINKAGE, IT . . .

#### .... Increases Plasticity

Not only does Mortarproofing retain the required workability with less water—it actually increases it. The gelatinous properties of Mortarproofing so increase the plasticity that the mason must automatically reduce water or add sand—or both—to obtain proper consistency.

#### .... Checks Efflorescence

The puzzolanic action of the Omicron ingredient in Mortarproofing reduces the soluble salts which cause efflorescence originating from the mortar.

#### .... Reduces Water Absorption

The stearate ingredient of Mortarproofing assists bond, checks capillarity, and renders pores water-repellent.

#### .... Improves Adhesion

The plasticizing effect of Mortarproofing increases the extent of bond.

#### .... Increases Strength

Greater density resulting from reduced water-cement ratio increases the bond, shear and compressive strengths of the mortar.

\*L. A. Palmer and D. A. Parsons, "Permeability Tests of 8-in. Brick Wallettes," A.S.T.M., 6-25-34. Boston Chapter, American Institute of Architects, Bulletin of December, 1931, Committee Investigating Leaks.

\*\*Bureau of Standards Research Papers Nos. RP-683 and RP-746.

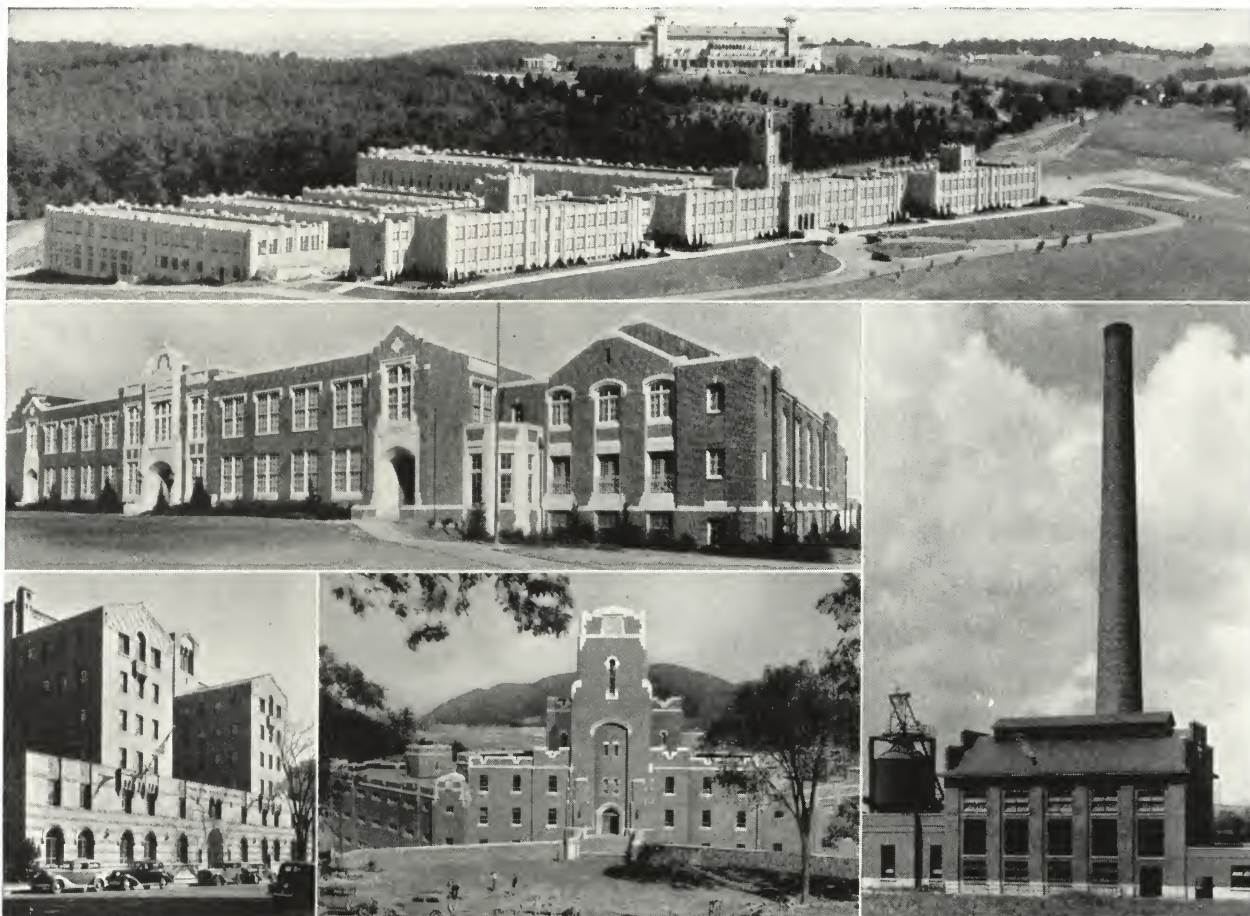
\*\*\*P. H. Bates, President of the American Concrete Institute at the 31st Annual Meeting, New York, February, 1935: "... A very large part of the mixing water should really be called 'placing water.' ... We are, therefore, attaining a strength less than the potential strength and in so doing also materially affecting adversely the properties of volume change and durability. If the composition of a cement or its physical nature can be so modified that the water required is reduced, we are approaching the potential strength, increasing the durability, and reducing the volume change. ..."

**See Page 6 for Specifications and Test Data**





# MORTAR FOR 40,000,000 Bricks MORTARPROOFED IN 1935



Hershey Industrial School (Foreground) and Hershey Hotel (Background)—3,537,000 Mortarproofed Bricks. J. L. Long Junior High School, Dallas, Texas—Bryan & Sharp, Archt. Central Y. M. C. A., Toledo, Ohio—Mills, Rhines, Bellman & Nordhoff, Toledo, Ohio, Architects. Gymnasium—U. S. Military Academy—West Point—One of Numerous Buildings Involving 5,700,000 Mortarproofed Bricks. Power House—Baltimore City Hospital—300,000 Mortarproofed Bricks.

*Brick construction in all parts of the country is being Mortarproofed. Some of the outstanding applications of 1935 are illustrated above or listed below.*

J. C. Penney Store, Milwaukee, Wis.  
Kirchoff & Rose, Milwaukee, Wis.  
Ebenezer Mitchell College, Salisbury, N. C.  
Odis Clay Poundstone, Atlanta, Ga.  
Amanda E. Stoudt High School, Reading, Pa.  
Ritcher & Eiler, Reading, Pa.  
9 State Police Barracks in Massachusetts  
Stevens, Curtin & Mason, Boston, Mass.  
Coca Cola Bottling Company, Tuscaloosa, Ala.  
Carl B. Cooper, Montgomery, Ala.  
University of Georgia, Augusta, Ga.  
Scroggs & Ewing, Augusta, Ga.  
Hiram Walker Distillery, Peoria, Ill.  
Smith, Hinchman & Grylls, Detroit, Mich.  
R. C. Church of Assumption, Syracuse, N. Y.  
Hans P. Weber, Syracuse, N. Y.  
General Hospital, Laundry & Power Plant, Kansas City, Mo.  
Archer & Radotinsky, Kansas City, Mo.  
Albrecht Residence, St. Joseph, Mo.

E. I. DuPont de Nemours, Wilmington, Del.  
Several Bldgs. Private Plans  
Felters Company Plant, Binghamton, N. Y.  
A. W. Bowie, Binghamton, N. Y.  
Perfect Circle Piston Ring Co., Hagerstown, Ind.  
J. A. Harris Bldg., Blue Bell, Pa.  
Willing, Sims & Talbutt, Philadelphia, Pa.  
Exeter School, Exeter, R. I.  
Ambrose J. Murphy, Providence, R. I.  
University of Tennessee, Biology Bldg., Knoxville, Tenn.  
Barber & McMurray, Knoxville, Tenn.  
North Mount High School, Fort Worth, Texas  
W. C. Hedrick, Inc., Fort Worth, Texas  
Wichita Falls Hospital, Wichita Falls, Texas  
Voelcker & Dixon, Wichita Falls, Texas  
Western Electric Company, Baltimore, Md.  
Upjohn Co.—Power Plant, Kalamazoo, Mich.  
Albert Kahn, Inc., Detroit, Mich.  
First National Bank, Lewisburg, Pa.  
Lawrie & Green, Harrisburg, Pa.

See Page 6 for Specifications and Test Data



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(See also pages 4 and 5)

## TESTS PROVE MORTARPROOFING EFFICIENCY

### REDUCES SHRINKAGE

FROM COLUMBIA UNIVERSITY TEST Nos. 2356-57

Mix	Shrinkage in Inches 2" x 4" Specimens			Bond Strength 28 days	Comp. Strength 28 days
	24 hrs.	7 days	28 days		
1:1:6	.027	.030	.030	66.8*	704*
1:1:6 with M.	.017	.019	.020	72.7	740
1:2:9	.022	.024	.023	73.0	490
1:2:9 with M.	.018	.014	.015	90.8	569
1:2:11 with M.	.010	.014	.015	74.9	462

Average of three specimens. \*Pounds per sq. inch.

### STRENGTHENS BOND

Mix	Water Ratio	Bond Strength of Mortar			Comp. Strength 28 days
		7 days	14 days	28 days	
A	.95	2070	1670	2150	2037
B	.95	2130	2010	3500	2226
C	.95	2070	1770	3800	2100
D	.85	1070	2170	2900	2670

A—1:3 plus 15% lime—untreated.

B—1:3 plus 15% lime—with Mortarproofing.

C—1:3 plus 15% lime—Red Mortarproofing.

D—1:3—no lime—with Mortarproofing.

### CHECKS EFFLORESCENCE

The gradual dissolution of soluble salts in mortar is the prime cause of its efflorescence. This R. W. Hunt Test, No. 58769, is a reliable measure of the absence of solubles.

Tensile Specimens Immersed in ½% Sulphuric Acid:

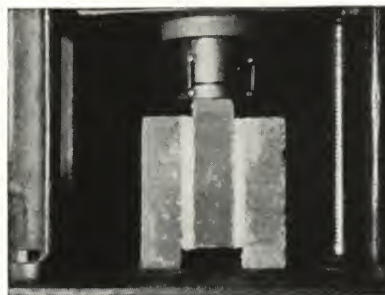
Pounds per Square Inch	28 Days in Water	21 Days in Acid	Loss From Corrosion
1:3 Concrete, Untreated	470	432	8.8%
1:3 Concrete, Plus Omicron	520	513	1.3%
Per Cent Increase with Omicron	10.6%	18.5%	

Doubles Plasticity with Lower  
Water Ratio



MIX—1 Cement: 1 Lime: 6 Sand  
A B  
6 gal.—WATER—5¾ gal.  
0—MORTARPROOFING—¼ gal.  
2⅛"—SLUMP—4¾"

### Shear Test



3500 Lbs. Pressure Required to  
Break Mortarproofed Bond

### REDUCES WATER ABSORPTION

Mix—1:3	Percent absorption by weight				Decreased absorption
	1 hr.	2 hrs.	1 day	Totally immersed	
Untreated	1.4	1.8	2.5	3.4	....
Mortarproofing	0.7	0.9	1.1	1.8	47%
Average—4 stand- ard Stearate Pastes	0.65	0.875	1.3	1.85	47%

### SPECIFICATION (NON-COLORED)

Mortar for all exterior walls shall be composed of (1 part Cement: 1 part Lime Putty; 6 parts Sand; 1:2:9; an approved masonry cement, or other mix as designated) to which shall be added Master Builders\* Omicron Mortarproofing in the proportions of 1 quart per each sack of Cement and 1 quart per each cubic foot of Lime Putty, in exact accordance with the directions of the manufacturer, THE MASTER BUILDERS CO.

(\*For color, insert name of color here and change amount to use in accordance with color chart.)

### COLORS

Colored Mortarproofing mortar retains the inherent qualities of the uncolored Mortarproofing including *reduction of shrinkage*.

Colored Mortarproofing joints *do not fade*. Whereas ordinary mortar colors seriously impair compressive strength, Colored Omicron Mortarproofing increases compressive strength over plain mortar; greatly *reduces shrinkage*.

Reduction of the salts which cause "fading" and producing colors ground to a colloidal fineness eliminates the fading, weakening of joints and increased shrinkage.

*Colors Available:* Chocolate, Black, 3 shades of Buff, 3 shades of Red, 2 shades of Brown.

Write or phone for color chart.



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# CEMENT PAINT FOR ALL MASONRY SURFACES

## MASTERTEX

For Exterior and Interior of Brick, Tile, Stucco, Stone and Other  
Masonry Surfaces

**P**AINTS or coatings containing oils, glues, caseins or other volatiles will not adhere to wet masonry surfaces. If applied to dry walls that later become wet they saponify and come off.

Mastertex thrives on moisture, and is proof against chemical action of lime, alkali or water. It contains the basic ingredient, Omicron, which increases strength and resistance to corrosion.



Pool,  
Oakwood Club,  
Cleveland

Geo. B. Mayer,  
Architect

### Characteristics

Mastertex waterproof cement paint, specially designed for exterior and interior coating of concrete, brick, tile, stucco, stone and other masonry, is applied directly to the wet surface, forms a permanent bond, becomes a part of the wall. It will not blister, peel or flake and its hardness increases with age and with successive wetting. It can be washed or brushed clean repeatedly without being injured.

Mastertex seals pores and hair cracks, checking leakage and absorption. It is applied directly to fresh concrete immediately after stripping forms, speeding the job to completion.

Not designed for use on floors or on vitrified, enameled, magnesite, gypsum, or lime surfaces.

### Advantages

Only type of coating that adheres firmly to damp basement walls, swimming pools, garden pools, tanks, tunnels, and other masonry subject to constant moisture. Recommended for inside white on all masonry surfaces, particularly in dairies, laundries and other plants subject to steam, fumes and humidity. Extensively used in reintegrating spalled concrete structures and as a finish cement stucco coat. Most economical and long-lived outside white for all masonry because of its resistance to dampness and weathering.

### Specification

All surfaces as indicated on plans shall be given two coats of Master Builders (insert color) Mastertex, waterproof cement coating, following the directions of the manufacturers, The Master Builders Company.

### Mastertex Colors



135 BLUE



157 CREAM



155 IVORY



145 GREEN



165 LIGHT GREY



166 FRENCH GREY



168 DARK GREY

Also  
132 White

Other colors  
made to order



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## INTEGRAL LIQUID COLORED HARDENER COLORMIX

**C**OLORMIX is the original colored integral floor hardener using the gauging water dye principle. Its notable performance has made Colormix the "standard of comparison" for over 15 years.

The efficiency of the product, combined with Master Builders technique, in which leading floor finishing contractors are today well-acquainted, make it possible for the architect to specify Colormix with full confidence in the finished result.

*Inexpensive*—Permanently colors and hardens floors for less than the cost of two paintings.

### Uses

Recommended when separate top finish integrally colored is desired as in

Hotels	Salesrooms	Hospitals
Clubs	Residences	Institutions
Schools	Churches	Offices

And wherever decorative wear-resisting floors are needed—for both interior and exterior areas.

### Strength

Colormix increases strength from 20% to 35% over plain concrete.

### Short Specification

The concrete floor finish as indicated shall be colored and hardened with (insert name of color from chart, page 10) Colormix, 1 gallon to each sack of cement, exactly in accordance with the directions of The Master Builders Company. Floors shall be cured and protected by the use of non-staining waterproof paper. When ready for use surface shall be cleaned and shall be given a finish treatment of Colorwax applied in accordance with directions of the manufacturer, The Master Builders Company.

### Characteristics

1. Colormix is *supplied in liquid form* to be added to the gauging water or directly into the mixer. Thorough dispersion is thus obtained, assuring uniformity of color and hardness.

2. Colormix contains Omicron (see page 3) which *reduces shrinkage* through its unique function of substantially increasing plasticity with water-cement ratio reduced up to 12½%.

3. The Omicron Ingredient in Colormix preserves fullness or richness of colors by checking efflorescence and color clouding.

4. Colormix contains no calcium chloride.

### Colorwax

Colormix Floors, when cured, should be polished with Colorwax, which comes in corresponding colors.

The wax develops and preserves the full beauty, making cleaning easier and protects surface from staining.

### Colors

Please refer to color chart, page 10.







## COLORING AND HARDENING FLOORS IN PLACE DYCROME

**D**YCROME provides an unusual technique for permanently coloring and hardening existing *plain* concrete floors. Finish provided is permanent because colors are etched into the surface.

### Advantages

1. Attractive color range to harmonize with existing interior color scheme. Produces a variety of interesting shades of Blue, Green and Brown.

2. Colors include Flemish Oak, Weathered Bronze, Cordovan Brown, Palmetto Green, Nile Green and Jade.

3. Permanent finish because the colors are *etched into the concrete*.

4. Hardens the surface — resists wear and dusting.

5. Cost over period of even few years only a fraction of cost of repeated paintings which wear rapidly. Also much less costly and much more artistic than laying linoleum or installing wood or special flooring.

### Specification

*Existing Floors*—The concrete floor finish shall be colored and hardened with the Master Builders' Dycrome Method as applied by the Master Builders Service, Inc., or their authorized representatives.

*Installing New Floors*—Mortar for floors to be Dycromed shall be proportioned (mix desired), to which shall be added two pounds of hydrated lime for each bag of cement in the mix. Floors shall be turned over to the Master Builders Service, Inc., properly cured and in a clean and stainfree condition.

## PAINTING DAMP FLOORS SUPER-COLORSEAL

**F**OR painting basement or other floors lying directly on the ground.

Where moisture penetration makes application of oil paints impossible.

Super-Colorseal, a rubber base paint, has *more than 3 times the life* of the best oil paints.

Where moisture penetration is a problem, Seal-Coat, a recently developed penetrating treatment for damp or wet floors is first applied. This seals the floor and makes it moistureproof. Over this Seal-Coat, Super-Colorseal is applied 24 hours later.

Moisture penetration from below is permanently stopped and painted surface will be tough—will not scuff and is highly wear-resistant.

### Colors

Tan—Tile Red—Nile Green—Dust—Light Gray—Medium Gray—Dark Gray—Steel Gray.

### Specification

Floor surfaces as indicated, shall be treated with Master Builders' Moisture-Proof Seal-Coat followed by application of Master Builders (insert color) Super-Colorseal in accordance with the directions of The Master Builders Co.



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MASTER  
BUILDERS  
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# HARDENING AND COLORING FLOORS BY LOW COST—DUST-COAT METHOD COLORED METALICRON

**C**OLORED METALICRON is a dry compound of superfine colors, Omicron and tough, wear-resisting aggregate. It produces an integrally colored wearing surface that is non-absorbent and highly wear resistant.

Colored Metalicron type of finish has been standard for over 20 years. Thousands of these floors from 5 to 20 years old are in service today. The method of installation is well known to experienced floor finishers and therefore can be specified with full confidence.

Initial cost less than that of two coats of paint—year by year cost incomparably lower.

## Uses

Recommended for use either in separate top finish or where topping is omitted and base is finished off as a wearing surface ("monolithic").

For

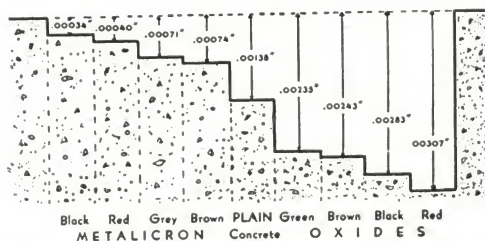
Office Buildings	Garages	Service Stations
Loft Buildings	Basements	Salesrooms
		Sidewalks

## Characteristics

1. Two or three times more wear resistant than plain cement finish.
2. Omicron ingredient protects colors from clouding and efflorescence.
3. Omicron ingredient resists attacks of acids, alkali solutions and corrosive agents.

## Strength

Abrasion tests show that Colored Metalicron floors are two to three times more wear-resistant than plain cement finish. Twenty-eight-day concrete slabs subjected to abrasion show the relative strength of—(a) plain concrete, (b) concrete colored with high grade commercial oxides, and (c) concrete colored and hardened with Colored Metalicron.



Tested and Reported by James H. Herron Company, Testing Engineers and Chemists, Cleveland, Ohio

## Non-Slip

A special formula of Colored Metalicron with non-slip aggregate is manufactured for use in finishing colored ramps, corridors, stairs, wet areas where slip-proof surface is desirable.



*Red Metalicron Floor in service station of Gulf Refining Company, Miami. Waterproof, hardened and colorfast. Protected from stain and corrosive action of oil and grease drippings by Omicron ingredient.*

## COLORMIX & METALICRON COLORS

*Color shades shown subject to slight variation with different brands of cement and aggregates.*



*Also available in Black and White.*

## Short Specification

The concrete floors shall be colored and hardened with Master Builders\* Colored Metalicron using no less than 30 lbs. of Colored Metalicron and 22 lbs. of cement for each 100 square feet of surface, applied in accordance with the directions of The Master Builders Company.

*\*If non-slip feature is desired, insert words "non-slip."*



IN CANADA  
THE  
MASTER  
BUILDERS  
CO., LTD.  
TORONTO  
MONTREAL



# COLORLESS SURFACE WATERPROOFING MASTERSEAL

Masterseal waterproofs brick, tile, stucco, stone and concrete without changing the appearance of the surface. It retards disintegration, resists corrosive action of smoke and fumes and prevents sanding, stain and efflorescence.

Two types of Masterseal are available—All-Weather Masterseal—for use on *wet or dry brick walls* down to 33° F.—and Masterseal No. 1 and No. 2 for *dry surfaces of brick, tile, stucco, stone or concrete* above 50° F.

## All-Weather Masterseal

Waterproofs walls when they *need* waterproofing—during wet weather. May be applied to wet or dry brick surfaces at any temperature down to freezing point. (All other transparent waterproofings require at least 50°).

In Spring or Fall, when walls are likely to remain wet for days, All-Weather Masterseal can be successfully applied without waiting for walls to dry out.

Contractors lose less time on job on account of rain. Their costs and their bids will be lower.

With conventional materials which require warm dry walls the likelihood of work completed under pressure with some areas treated before they are dry is a danger removed when "All-Weather" is used.

"All-Weather" has  $2\frac{1}{2}$  times the covering capacity of conventional surface waterproofings; two coats of All-Weather Masterseal are equivalent to 3 to 4 coats of the latter.

Designed for use on brick surfaces only; for stone, stucco, etc., use Masterseal No. 1 or No. 2.

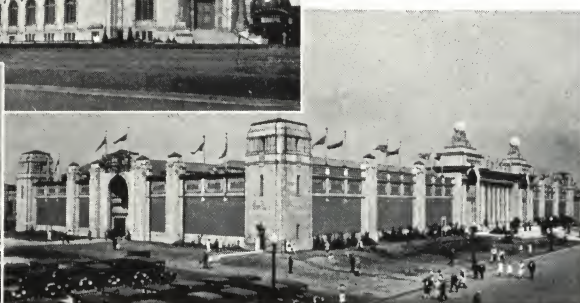
## Specification

All brick surfaces as indicated on plans shall be treated with Master Builders All-Weather Masterseal, surface waterproofing, following the directions of the manufacturers, The Master Builders Co.

Three of the Largest  
Buildings at Canadian  
National Exhibition,  
Toronto, Ont.



MASTERSEAL used to  
Waterproof and  
Preserve These  
Structures



## For Waterproofing Brick, Tile, Stucco, Stone, Concrete

Masterseal No. 1—Transparent, darkens light surfaces slightly, but it is the longest lived of the conventional type.

Masterseal No. 2—Colorless and invisible, slightly less permanent than No. 1 or "All-Weather," under equal conditions.

These *must* be applied to dry surfaces, at or above 50° F. One gallon for 2 coats on 150 sq. ft. average surface.

## Short Specification

All surfaces of brick, tile, stucco, stone and concrete as indicated on plans shall be treated with Master Builders (Insert Masterseal No. 1 or No. 2) colorless surface waterproofing following the directions of the manufacturers, The Master Builders Co.





# WATERPROOFING PASTE FOR MASS CONCRETE AND MORTAR

## STEAROX "30"

**S**TEAROX "30" is a pure stearate waterproofing paste containing 30% stearic acid.

Stearox "30" has been made possible by the discovery of a new process of introducing straight concentrated stearic acid into concrete without the aid of useless adulterants.

### An Authority States

"The stearate or stearic acid ingredient is the most effective constituent and the value of commercial waterproofing pastes and powders seem to depend largely upon their stearate content.

"Analyses of commercial waterproofing pastes show great variations in their stearate content. It has been the practice to add substances such as alkalis and ammonia to waterproofing pastes. *A pure stearic acid, if it can be made easily soluble in the mixing water, would be the most desirable.*"

F. O. Anderegg, Ph.D.,  
Consulting Specialist on Building Materials.

Stearox "30" is *pure, unadulterated, and quickly dissolved.*

### Advantages

Since authorities agree that stearate content controls waterproofing value, Stearox "30"—which contains 30%—has indisputable advantages when compared with other preparations. One of the most widely used of these contains only 16% stearic acid—another only 3%.

Water absorption of concrete is reduced 60% when Stearox "30" is applied. Tests show not only the lowest total absorption but the lowest rate of absorption, which is equally important.

	1 Hr.	1 Day	Decreased absorption
Plain 1:3 mortar	.9%	1.5%	....
Stearox "30" (.6 lbs. per sack cement)	.3%	.6%	60%
6 brands paste Avg. (1½ lbs. per sack cement)	.53%	.617%	59%
6 brands powder Avg. (2 lbs. per sack cement)	.7%	1.1%	26%

### Economies

Only 3.6 lbs. of Stearox "30" are required to provide standard waterproofing value. This compares with 9 to 36 lbs. of other types.

Handling and transportation charges are lower, because Stearox is more compact than other waterproofing preparations.



Penik & Ford's Grain Elevator—Cedar Rapids  
Stearox "30" used throughout

### Protection

It is difficult to determine the relative waterproofing value of different brands because there is no convenient way of determining stearate content. (Recent analyses have shown an extreme variation of stearic acid contents and indicate that builders have received not bargains, but only what they paid for or less.)

Stearox "30" has a positive standard of value. The builder knows he is getting a preparation with 30% stearic acid—the purest, strongest and most for the money.

To insure receipt of full value, the following specification is advisable: "The waterproofing shall be free of non-stearic ingredients, and not less than .6 lbs. of 30% Stearic Acid Paste (or corresponding increased proportion of paste of lesser stearic acid content) shall be used per sack of cement."

### Specification

All mass concrete shall be waterproofed integrally by the use of not less than 3.6 lbs. of Master Builders Stearox "30" waterproofing paste per cubic yard of cement, used exactly in accordance with the directions of the manufacturers, The Master Builders Co.





# COMMERCIAL & LIGHT DUTY INDUSTRIAL FLOORS

## MASTER MIX

**E**XPERIENCE has proved that the best way to harden a concrete floor is—*integrally*. Surface treatments serve their purpose as corrective measures, but at best are temporary, whereas the *properly* integrally hardened concrete floor will last indefinitely.

Master Mix has been the standard integral liquid floor hardener and waterproofer (non-colored) for commercial and light industrial concrete floor finish since 1915.

Ideal for office building, laundries, auditoriums, lofts, schools, garages, and similar areas subject to heavy foot traffic or light trucking.

### Important Characteristics

1. Many integral hardeners are solely or principally calcium chloride solutions. They accelerate the set, give a higher early strength, but cause serious shrinkage. Master Mix, containing Omicron, is not a calcium chloride product.

2. By virtue of its Omicron content, it *reduces* shrinkage while *increasing* plasticity with *reduced* water-cement ratio. The proven result is a dense hard and permanent floor.

3. High plasticity permits the use of a dry mix with silica and other hard aggregates—easy to trowel—prevents dusty surface.

4. High compressive strength withstands wear indefinitely.

5. Master Mix Floors not affected by mild corrosives because Omicron combines with a substantial portion of free lime *throughout* topping.

### STRENGTH TEST (TENSILE)

Pittsburgh Testing Lab. No. 62951

Tensile Strength Pounds per Square Inch	Untreated	Master Mix	Per Cent Increase
Age			
7 days	490	568	15.9
28 days	603	692	14.7
90 days	655	722	10.2
365 days	688	815	18.4

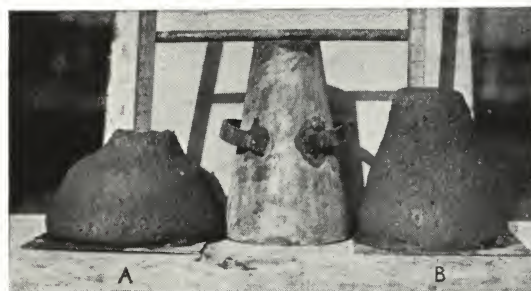
### ABRASION TEST

Columbus Testing Laboratories, Columbus, Ohio

Relative depth of wear on concrete slabs, cured 28 days, measured after six hours of constant abrasion:



### HOW MASTER MIX IMPROVES WORKABILITY



"A" with MASTER MIX—"B" without MASTER MIX

1 part cement to 2 parts sand.  
4 1/4 gal. water plus 1 quart of  
Master Mix. SLUMP, 6 1/2".

1 part cement to 2 parts sand.  
4 1/2 gal. of water. SLUMP, 3".

### Specification

Use two quarts per sack for floors subject to corrosive agents as in dairies, breweries, packing plants, etc., followed by surface application of Concrete Preservatives (see Page 15).

The concrete floor finish shall consist of one part standard portland cement, one part clean, graded, gritty sand and two parts clean, hard pea gravel or crushed stone graded in size up to one-quarter inch. (For light traffic areas change mix to "one part portland cement and two parts clean, graded sand.") Floor shall be hardened with Master Builders Master Mix, used in the proportion of one quart of Master Mix per sack

of cement. The Master Mix shall be added to the gauging water, or shall be thrown directly into the mixer. Not over 5 gallons of liquid, including the Master Mix and moisture in the aggregate, shall be used per sack of cement. The finish mortar shall be placed, finished and protected in accordance with directions of The Master Builders Co.

### COLORED MASTER MIX

Identical in all respects to Master Mix—plus colors. It colors and hardens entire thickness of topping and is ideal for low cost color treatment of large areas. Colored Master Mix floors receive a supplementary treatment of Glazecoat,

which imparts a permanent finish. For large areas the results produced by the Colored Master Mix-Glazecoat method cannot be duplicated by any other means for less than several times its small cost.

Red . . . Brown . . . Tan . . . Gray . . . Black



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# HEAVY DUTY INDUSTRIAL FLOORS METALICRON

**WEAR-RESISTANCE**—the long recognized quality of metallic hardened floors, is now supplemented by *corrosion resistance* in the Metalicron floor through its Omicron ingredient.

More than twenty years of experience have demonstrated that the Metallic Hardened type of concrete floor, originated in 1910 by The Master Builders Co., is the most wear-resisting and economical floor for industrial and heavy traffic, as in warehouses, machine shops, pulp and paper mills, steel mills, foundries, garages, etc.

## Important Characteristics

Metalicron is pure Master Builders water-absorbent metallic hardener combined with Omicron. It *guarantees double protection* for concrete floors:—

1. A hard, long-wearing surface.
2. Protection from disintegration, from cutting oils and alkalis that commonly attack industrial floors.
3. Because it greatly increases the workability of the finish mortar, Metalicron can be easily and perfectly incorporated in *dry mixes* (where ordinary hardener is not workable), thus affording all the advantages of low water-cement ratio.

Recently certain "imitations" of Metalicron have appeared. Conclusive evidence, however, proves the outstanding superiority of Metalicron. (Facts upon request.)

## Performance

The performance of Metalicron Floors in such typical installations as the following explains the universal acceptance of Metalicron Floors as the best Heavy Duty Floor for Industry:

The Pittsburgh Plate Glass Co., Pittsburgh, Pa.  
Merchandise Mart, Chicago  
Western Electric Co., Kearney, N. J.  
The McGraw Hill Publishing Bldg., New York City  
Ford Motor Company  
The Continental Can Co., Chicago, Ill.  
The Pennsylvania Railroad and scores of other equally discriminating users.

## Facts to Consider

Even the best hardeners are inexpensive. An initial saving of perhaps one-half cent per square foot, through the purchase of a hardener "just as good," is hardly justified when this slight saving may jeopardize the desired results in a floor costing 12 to 20 cents per sq. ft. to install.

Metalicron is an essential ingredient for excellence in all concrete floors. Modern methods and materials, such as special types of floors, silica aggregates, etc., in no way obviate the necessity of the use of Metalicron.

## Short Specification

The concrete floor finish shall be hardened with Master Builders Metalicron using not less than (here insert "30 lbs." for average duty, "40 lbs." for heavy duty or "50 lbs." for extremely heavy duty floors) of Metalicron for every 100 square feet of surface. The Metalicron shall be applied and the floor finished and protected in accordance with the directions of The Master Builders Co. (If the non-slip finish is desired, insert the words "Non-Slip" before the word "Metalicron.")



St. John's Park Freight Terminal, New York Central Railroad  
1,300,000 sq. ft. of Metalicron Floors. J. F. Pfan, Chief Engineer;  
James Stewart & Co., General Contractors; United Specialty  
Construction Co., Floor Contractors

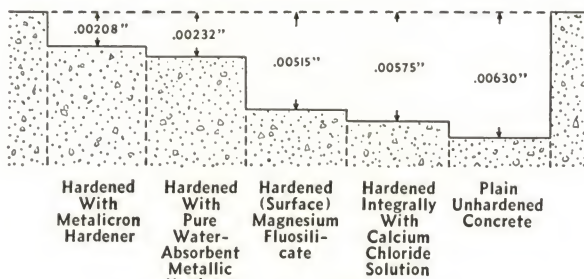
## DISINTEGRATION CHECKED

Report No. 65412, Pittsburgh Testing Laboratory  
4" x 2" compression cylinders of 1:3 concrete, plain and treated with Metalicron, were stored in water and in a corrosive solution of 10% sodium sulphate for periods given. Note comparative resistances to disintegration.

Age Days	Stored In	Comp. Strength Lbs. per Sq. Inch		Increase With Metalicron
		Plain 1:3 Concrete	With Metalicron	
60	Water	3653	4653	27.3%
	10% Sod. Sul.	2827	4563	61%
	Loss from Corrosion	22%	2%	
90	Water	3233	4857	50.2%
	10% Sod. Sul.	2437	4683	92%
	Loss from Corrosion	24%	4%	

## ABRASION CHECKED

Concrete specimens subjected to abrasion tests show following relative wear resistance:



## Non-Slip Metalicron

The standard formula is changed to include non-slip aggregate. Specify "Non-Slip Metalicron" for use on ramps, stairs and other areas where non-slip finish is desired.





# OTHER MASTER BUILDERS PRODUCTS

Detailed descriptions, technical data and specifications on any of these products sent upon request

## METALLIC WATERPROOFING

Master Builders Metallic Waterproofing is applied to either inside or outside wall surfaces, usually the inside surface. It permanently seals all pores and cracks, and provides a water-tight metal-cement sheath that defies time and elements. Applied as successive brush coats or as a plaster coat, or both, as conditions require.

Metallic Waterproofing is used widely instead of the more expensive and difficult membrane method. One great advantage is the ease with which structural cracks or leaks are located and cheaply repaired. Metallic Waterproofing is a permanent seal and bond for repairing and re-integrating masonry and concrete structures.

## BONDING IRON

For Bonding Separate Top Finish to Hardened Concrete Slab

Bonding to a set slab is largely a matter of workmanship, but results are surer when Master Builders Bonding Iron, specially designed for this purpose, is used. Bonding Iron is applied in a two-coat treatment to the base slab after the surface has been roughened and thoroughly cleaned and saturated with water. The first coat oxidizes, providing a waterproof sheath that prevents the dry base from drawing moisture from the topping. The second coat provides an additional mechanical key. Approximately 15 pounds per 100 square feet required.

## Specification

Where a cement finish is to be applied to a set slab, the slab shall be thoroughly roughened with picks and broom cleaned; slab shall then be saturated with water, given two coats of Master Builders Bonding Iron applied exactly in accordance with directions of the manufacturers, The Master Builders Co.

## CAULKING COMPOUND

In nine colors and natural. Applied by knife or gun.

## FOR CONTROL OF SHRINKAGE IN CONCRETE

### POZZOLITH

For Mass Concrete

Prolongs life of concrete by increased density and reduced shrinkage, which intensifies resistance to freezing, thawing and corrosion. Pozzololith does this through puzzolanic action, reducing the solubles, and by reducing water ratio and increasing workability in any mix, whether undersanded, oversanded or well graded.

For More Specific Information Concerning Pozzololith and Embeco, Write or Phone Us or Our Nearest Representative

## SANISEAL

For Floors Already Installed

Master Builders Saniseal is a powerful chemical hardener, which when mixed with water and brushed into the floor surface, deposits in the pores a hard, wear-resisting crystal. This arrests dusting and hardens the surface.

Saniseal is designed as a maintenance or corrective treatment for floors already installed. Not less than 2 lbs. of Saniseal should be used per 100 sq. ft.

## CONCRETE PRESERVATIVE

Protects concrete from the attack of reagents which ordinarily cause rapid deterioration, such as solutions of alkalis, acids and salts. It is a moderately viscous amber liquid of a non-volatile synthetic base, which, when applied on any dry concrete surface, penetrates and fills the pores with a waterproof corrosion resistant. An excellent alkali-resisting priming coat for oil paints to be used on concrete or masonry, as it waterproofs, forming a strong bond between paint and concrete, preventing blistering and peeling. Concrete Preservative is recommended for application to all concrete exposed to severe corrosive conditions, such as floors in food manufacturing plants, bakeries, laundries, concrete tanks and vats, sewers, silos, bottling plants.

## PLASTER BOND

A black bituminous-base adhesive paint for excluding dampness from the inside of exterior walls that are to receive a plaster finish.

## FOUNDATION COATING

A black elastic hydrocarbon waterproofing applied cold to exterior surface of masonry below grade.

### EMBECO

For Grouting, Reintegration and Repair

Expanding aggregate which wholly eliminates shrinkage. Increases strength 50%; eliminates shrinkage cracks in mortars whether placed by hand or gun. Of major importance for grouting, heavy duty floors, and in repair and reintegration of mass and reinforced concrete structures. Prevents shrinkage and checking of gunned concrete.

THE  
MASTER  
BUILDERS  
CO.  
CLEVELAND  
OHIO

### REPRESENTATIVES

(For Street Address and Phone Number, Consult Directory)

(Continued from Page 2)

MONTGOMERY, ALA.  
T. M. Gorrie  
MONTREAL, QUE.  
Webster & Sons, Ltd.  
NASHVILLE, TENN.  
John Williams Co.  
T. L. Herbert & Sons Co.  
NEW ORLEANS, LA.  
Clifford A. King, Jr.  
J. J. Clarke Co.  
NIAGARA FALLS, N. Y.  
Empire Bldg. Sup. Co.  
NORFOLK, VA.  
W. O. Sherman  
OKLAHOMA CITY, OKLA.  
Bissell Bldg. Sup. Co.  
OMAHA, NEBR.  
Earl S. Lewis & Co.  
OTTAWA, ONT.  
Webster & Sons, Ltd.  
PHOENIX, ARIZ.  
Walter Dobrie  
PITTSBURGH, PA.  
McCready-Rodgers Co.  
PLATTSBURGH, N. Y.  
Dock & Coal Co., Inc.  
PORT ARTHUR, ONT.  
Ernest A. Cuff  
PORTLAND, ORE.  
McCruken-Ripley Co.  
QUEBEC CITY, QUE.  
Webster & Sons, Ltd.  
ROCHESTER, N. Y.  
Geo. A. McNeerney  
ROCKY MOUNT, N. C.  
M. P. J. Williams  
ST. LOUIS, MO.  
Heinecke Coal & Mat'l's Co.  
ST. PETERSBURG, FLA.  
E. L. March  
SALT LAKE CITY, UTAH  
Hawley-Richardson-Williams Co.  
SEATTLE, WASH.  
Tourtellotte-Bradley Co., Inc.  
SYRACUSE, N. Y.  
F. J. Ludwick  
TAMPA, FLA.  
J. E. Wood  
TOLEDO, OHIO  
Kuhlman Co.  
TOPEKA, KANS.  
Ray Anderson  
UTICA, N. Y.  
American Hardwall Plaster  
VANCOUVER, B. C.  
The O'Neil Co., Ltd.  
WALKERVILLE, ONT.  
Kenneth E. Shaw  
WASHINGTON, D. C.  
A. F. Woodson Co.  
WHEELING, W. VA.  
H. L. Seabright Co.  
WICHITA, KANS.  
Spencer Allen Fuel Co.  
WINNIPEG, MAN.  
Walker's Limited



IN CANADA  
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"The Vital Ingredient for Permanence in Concrete"



"OMICRON"

DISCOVERED

1927

OMICRON

THE MASTER BUILDERS COMPANY

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"The Vital Ingredient for Permanence in Concrete"



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